

Overview of materials for Nylon 6-3

Category : Polymer , Thermoplastic , Nylon , Nylon 6-3

Material Notes:

This property data is a summary of similar materials in the MatWeb database for the category "Nylon 6-3". Each property range of values reported is minimum and maximum values of appropriate MatWeb entries. The comments report the average value, and number of data points used to calculate the average. The values are not necessarily typical of any specific grade, especially less common values and those that can be most affected by additives or processing methods.

Order this product through the following link:

http://www.lookpolymers.com/polymer_Overview-of-materials-for-Nylon-6-3.php

Physical Properties	Metric	English	Comments
Density	1.08 - 1.65 g/cc	0.0390 - 0.0596 lb/in ³	Average value: 1.32 g/cc Grade Count:14
Water Absorption	5.50 - 8.00 %	5.50 - 8.00 %	Average value: 7.17 % Grade Count:6
Moisture Absorption at Equilibrium	1.50 - 2.10 %	1.50 - 2.10 %	Average value: 1.90 % Grade Count:6
Viscosity Test	115 - 160 cm ³ /g	115 - 160 cm ³ /g	Average value: 131 cm ³ /g Grade Count:6
Linear Mold Shrinkage	0.00100 - 0.00400 cm/cm	0.00100 - 0.00400 in/in	Average value: 0.00333 cm/cm Grade Count:6
Linear Mold Shrinkage, Transverse	0.00600 - 0.00900 cm/cm	0.00600 - 0.00900 in/in	Average value: 0.00817 cm/cm Grade Count:6

Mechanical Properties	Metric	English	Comments
Hardness, Shore D	84.0 - 90.0	84.0 - 90.0	Average value: 87.3 Grade Count:8
Ball Indentation Hardness	130 - 310 MPa	18900 - 45000 psi	Average value: 195 MPa Grade Count:8
Tensile Strength, Ultimate	120 - 220 MPa	17400 - 31900 psi	Average value: 175 MPa Grade Count:9
Tensile Strength, Yield	82.0 - 90.0 MPa	11900 - 13100 psi	Average value: 88.0 MPa Grade Count:5
Elongation at Break	2.00 - 50.0 %	2.00 - 50.0 %	Average value: 19.1 % Grade Count:14
Elongation at Yield	6.00 - 9.00 %	6.00 - 9.00 %	Average value: 8.10 % Grade Count:5
Modulus of Elasticity	2.20 - 14.5 GPa	319 - 2100 ksi	Average value: 7.24 GPa Grade Count:14
Flexural Yield Strength	80.0 - 342 MPa	11600 - 49600 psi	Average value: 153 MPa Grade Count:6
Flexural Modulus	2.70 - 12.0 GPa	392 - 1740 ksi	Average value: 4.45 GPa Grade Count:6

Mechanical Properties	Metric	English	Comments
Impact, Unnotched (ISC)	9.50 - 9.50 kJ/m ²	4.52 - 4.52 ft-lb/in ²	Average value: 9.50 kJ/m ² Grade Count:1
	@Temperature -40.0 - -40.0 °C	@Temperature -40.0 - -40.0 °F	
Charpy Impact Unnotched	6.00 J/cm ² - NB	28.6 ft-lb/in ² - NB	Average value: 8.73 J/cm ² Grade Count:14
	5.00 J/cm ² - NB	23.8 ft-lb/in ² - NB	Average value: 6.93 J/cm ² Grade Count:14
	@Temperature -30.0 - 0.000 °C	@Temperature -22.0 - 32.0 °F	
Charpy Impact, Notched	0.900 - 2.10 J/cm ²	4.28 - 9.99 ft-lb/in ²	Average value: 1.32 J/cm ² Grade Count:14
	0.600 - 1.10 J/cm ²	2.86 - 5.24 ft-lb/in ²	Average value: 0.902 J/cm ² Grade Count:14
	@Temperature -30.0 - 0.000 °C	@Temperature -22.0 - 32.0 °F	
Tensile Creep Modulus, 1 hour	2200 - 9600 MPa	319000 - 1.39e+6 psi	Average value: 3550 MPa Grade Count:6
Tensile Creep Modulus, 1000 hours	800 - 5200 MPa	116000 - 754000 psi	Average value: 1880 MPa Grade Count:6

Thermal Properties	Metric	English	Comments
CTE, linear	20.0 - 70.0 µm/m-°C	11.1 - 38.9 µin/in-°F	Average value: 40.2 µm/m-°C Grade Count:10
CTE, linear, Transverse to Flow	20.0 - 70.0 µm/m-°C	11.1 - 38.9 µin/in-°F	Average value: 52.9 µm/m-°C Grade Count:11
Melting Point	260 °C	500 °F	Average value: 260 °C Grade Count:7
Deflection Temperature at 0.46 MPa (66 psi)	85.0 - 260 °C	185 - 500 °F	Average value: 192 °C Grade Count:11
Deflection Temperature at 1.8 MPa (264 psi)	75.0 - 255 °C	167 - 491 °F	Average value: 176 °C Grade Count:10
Vicat Softening Point	99.0 - 230 °C	210 - 446 °F	Average value: 174 °C Grade Count:8
Glass Transition Temp, Tg	93.0 - 153 °C	199 - 307 °F	Average value: 131 °C Grade Count:6
UL RTI, Mechanical with Impact	65.0 - 80.0 °C	149 - 176 °F	Average value: 72.5 °C Grade Count:3
UL RTI, Mechanical without Impact	65.0 - 85.0 °C	149 - 185 °F	Average value: 75.0 °C Grade Count:3
Flammability, UL94	HB - V-2	HB - V-2	Grade Count:8
Glow Wire Test	850 °C	1560 °F	Average value: 850 °C Grade Count:3

Optical Properties	Metric	English	Comments
Transmission, Visible	90.0 %	90.0 %	Average value: 90.0 % Grade Count:4

Electrical Properties	Metric	English	Comments
Electrical Resistivity	1.00e+12 - 1.00e+15 ohm-cm	1.00e+12 - 1.00e+15 ohm-cm	Average value: 5.25e+14 ohm-cm Grade Count:12
Surface Resistance	1.00e+13 - 1.00e+15 ohm	1.00e+13 - 1.00e+15 ohm	Average value: 4.06e+14 ohm Grade Count:9
Dielectric Constant	3.30 - 10.0	3.30 - 10.0	Average value: 4.81 Grade Count:11
Dielectric Strength	19.0 - 35.0 kV/mm	483 - 889 kV/in	Average value: 26.6 kV/mm Grade Count:12
Dissipation Factor	0.00500 - 0.300	0.00500 - 0.300	Average value: 0.0640 Grade Count:12
Comparative Tracking Index	500 - 600 V	500 - 600 V	Average value: 575 V Grade Count:8

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